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10/577,645

05/01/2006

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EXAMINER

HEINCER, LIAM J

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|---------------------------------------|--|
| Office Action Summary | Application No. 10/577,645 | Applicant(s) HAYASHI ET AL. | |
| | Examiner Liam J. Heincer | Art Unit 1796 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-23 and 26-63 is/are pending in the application.
- 4a) Of the above claim(s) 26-63 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 20, 22 and 23 is/are rejected.
- 7) ☒ Claim(s) 21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Funaoka et al. (JP 2002/105240). Note: A certified translation is being used for JP 2002/105240.

Considering Claim 20: Funaoka et al. teaches a method for recovering a phenol containing lingocellulosic substance (¶0026) comprising putting a reaction mixture of a lignocellulosic material, p-cresol, and an acid (Working Example 1 ¶0043) in approximately 6.4 times the amount of the mixture of water (Working Example 1 ¶0043); leaving the mixture to stand (Working Example 1 ¶0043); and separating the precipitate from the water (Working example ¶0044). Since Funaoka et al. teaches adding 250 g of wood flour (150 ml) to 1200 ml of acid solution the reaction mixture is 1350 ml (Working Example 1, ¶0043). The mixture is then halved so that the volume is 675 mL. (Working Example 1, ¶0043). The reaction is then quenched with water so that the total volume is 5 L (4325 ml water). Therefore the water is added in an amount of ~6.4 (4325/675) times by volume of the reaction mixture.

Funaoka teaches the amount of water as being 6.4 times the volume of the wood, phenol and acid mixture. *A prima facie* case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985). See MPEP § 2144.05. 6.4 times the amount of water is sufficiently close to 6 times the amount of water that a person having ordinary skill in the art would expect them to have functioned similarly.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Funaoka et al. (JP 2002/105240) as applied to claim 20 above, and further in view of Tournier et al. (US 4,511,433).

Funaoka et al. teaches the process of claim 20 as shown above.

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Considering Claim 22: Funaoka does not teach the separation as being carried out in a filtration apparatus. However, Tournier et al. teaches separating lignin-phenol from cellulose (34-37) through filtration (6:38-41). Funaoka and Tournier et al. are combinable as they are concerned with the same field of endeavor, namely lignin-phenol separations. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have used filtration in the method of Funaoka as in Tournier et al., and the motivation to do so would have been, as Tournier et al. suggests, it is an economical process (6:61-62).

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Funaoka et al. (JP 2002/105240) as applied to claim 20 above, and further in view of Mattison et al. (US Pat. 4,936,999).

Funaoka et al. teaches the process of claim 20 as shown above.

Considering Claim 23: Funaoka does not teach a second filtration. However, Mattison et al. teaches filtering a liquid twice (14:34-45). Funaoka and Mattison et al. are combinable as they are concerned with the same technical difficulty, namely phase separation. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have added the second filtration step of Mattison et al. to the process of Funaoka, and the motivation to do so would have been, as Mattison et al. suggests, to increase the phase separation (14:34-45).

Response to Arguments

Applicant's arguments, see pages 2-4, filed June 18, 2007, with respect to the rejection(s) of claim(s) 20 under 35 U.S.C. § 102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Funaoka et al. (JP 2002/105240) under 35 U.S.C. § 103(a).

The arguments were persuasive as the amounts obtained from the Derwent abstract were not supported in the translation of the document later obtained.

Allowable Subject Matter

Claim 21 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 21 distinguishes itself over the prior art of record with regards to the substantially equal amount of water with regards to the reaction mixture volume added in the first step of claim 21. The closest prior art of record teaches an amount of water equal to 6.4 times by volume the volume of the reaction mixture.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Liam J. Heincer whose telephone number is 571-270-3297. The examiner can normally be reached on Monday thru Friday 7:30 to 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on 571-272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo, Ph.D./
Supervisory Patent Examiner, Art Unit 1796
7-Sep-08

LJH
September 4, 2008